Communicable Disease BULLETIN
The New Hampshire Division of Public Health Services July 2007

AN INCREASE IN NOROVIRUS ACTIVITY IN NEW HAMPSHIRE, 2006-2007

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Background

Norovirus infection is a common cause of acute gastroenteritis in the United States. Norovirus infection is caused by one of several viruses in a group of related viruses called noroviruses. This group of viruses includes the Norwalk virus, for which the group is named. Noroviruses are highly communicable and can be transmitted in a number of ways including person-to-person contact, consumption of contaminated food and water, via airborne droplets of vomit, and contact with contaminated surfaces. Infection is primarily characterized by vomiting and diarrhea, which may also be accompanied by abdominal cramps, nausea, fever, and headache. Symptoms of infection may last between 12 and 60 hours. Aside from supportive therapy for dehydration in severe cases, there is no treatment available for norovirus infection. Symptoms usually resolve within 48 hours.

New Hampshire Epidemiology

Norovirus infection is not a reportable disease in New Hampshire, however, outbreaks must be reported to the NH Department of Health and Human Services (NH DHHS) under RSA 141-C. Most outbreaks occur during the winter months between December and February and occur most often in institutional settings such as long-term care facilities and schools. Foodborne outbreaks of norovirus can occur year round and are most commonly associated with ready-to-eat foods that have been prepared by an ill foodservice worker. Between 2003 and 2006, there were 103 outbreaks of viral gastroenteritis reported to NH DHHS *(Table 1)*. All 103 outbreaks were either suspect or laboratory-confirmed outbreaks of norovirus. Laboratory diagnosis of norovirus is conducted using a molecular test at the NH Public Health Laboratories.

During the 2006-2007 winter season, a dramatic increase in norovirus activity was noted in NH and across the U.S. Much of this activity was attributed to circulation of a new strain of norovirus, called Minerva. Between December 1st, 2006 and March 31st, 2007, there were 76 reported outbreaks of viral gastroenteritis, 32 (42%) of which had ≥ two patients with laboratory confirmed norovirus infection[1]. There were an additional 20 outbreaks that had one positive specimen, which results in a total of 52 (68%) outbreaks with at least one norovirus-positive specimen. Six specimens were sent to CDC for further analysis and determined to be the new Minerva strain. Of the 76 outbreaks, 75 (99%) occurred in institutional settings. Long-term care facilities reported 64 (84%) of the 76 outbreaks, schools reported 6 (8%) outbreaks, acute care hospitals reported 5 (7%), and one outbreak occurred at a restaurant (1%).

Table 1
Reported outbreaks of viral gastroenteritis, New Hampshire, 2003-2006

Year	Foodborne	Person-to-person	Total
2003	1	29	30
2004	4	17	21
2005	3	16	19
2006	4	29	33
Total	**12**	**91**	**103**

Note: Number of outbreaks includes all outbreaks with a suspect or confirmed viral etiology.

Prevention

Prevention of norovirus outbreaks depends on scrupulous hand washing and appropriate environmental cleaning. In food service establishments, managers should ensure that employees frequently wash their hands with

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[1] Classification as an outbreak of laboratory confirmed norovirus requires at least two positive patient specimens.

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soap and water and that employees that report gastrointestinal illness are excluded from work until 48 hours after their symptoms have resolved. In healthcare facilities and schools, administrators should ensure that patients/students and staff frequently wash their hands and that all commonly touched surfaces in the facility are properly cleaned. Additionally, healthcare workers experiencing gastrointestinal illnesses should be excluded from work until 48 hours after symptoms have resolved. Public health professionals in the NH Communicable Disease Control Section are available 24 hours a day, 7 days a week to provide additional prevention and control recommendations. For disease control recommendations, or to report an outbreak, call 603-271-4496 or after hours 603-271-5300.

For more information on noroviruses:

CDC Norovirus Website: **http://www.cdc.gov/ncidod/dvrd/revb/gastro/norovirus.htm**

NH DHHS Website: **http://www.dhhs.nh.gov/DHHS/CDCS/LIBRARY/Fact+Sheet/norwalk-virus.htm**

TUBERCULOSIS IN NEW HAMPSHIRE, 1992-2006

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New Hampshire (NH) continues to be one of the lowest incidence states for active tuberculosis (TB) disease in the nation. Case counts have been variable over the last 15 years, but has averaged 18 cases per year *(see Figure 1)*. There was a 15-year low in 2005 with only four active TB cases. Hillsborough County, home to NH's two largest cities, had the highest percentage of cases.

Cases are more often pulmonary (67%) than extra pulmonary (29%) and four percent of cases have had both forms. Multidrug-resistant tuberculosis is uncommon in the state. Also, co-infection with HIV and tuberculosis is uncommon in NH (only 4 cases occurring in the last 15 years). Latent tuberculosis infection (LTBI) is more commonly seen than active tuberculosis.

Figure 1. Number of Cases of TB and Rate per 100,000 by Year for 1992-2006

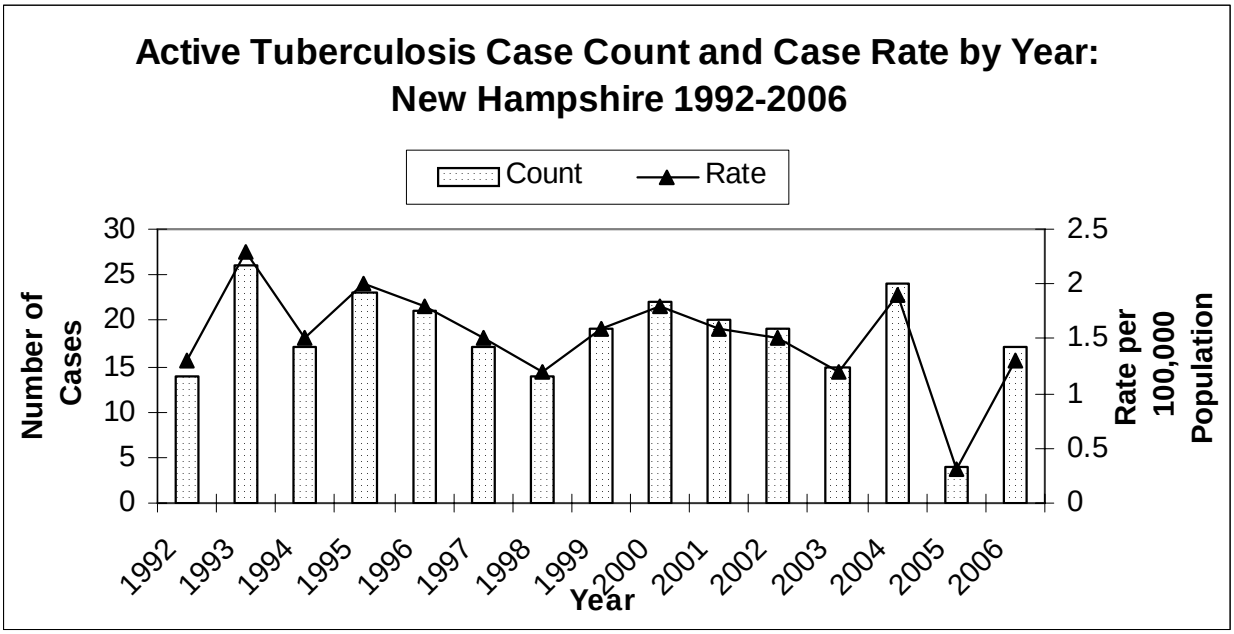
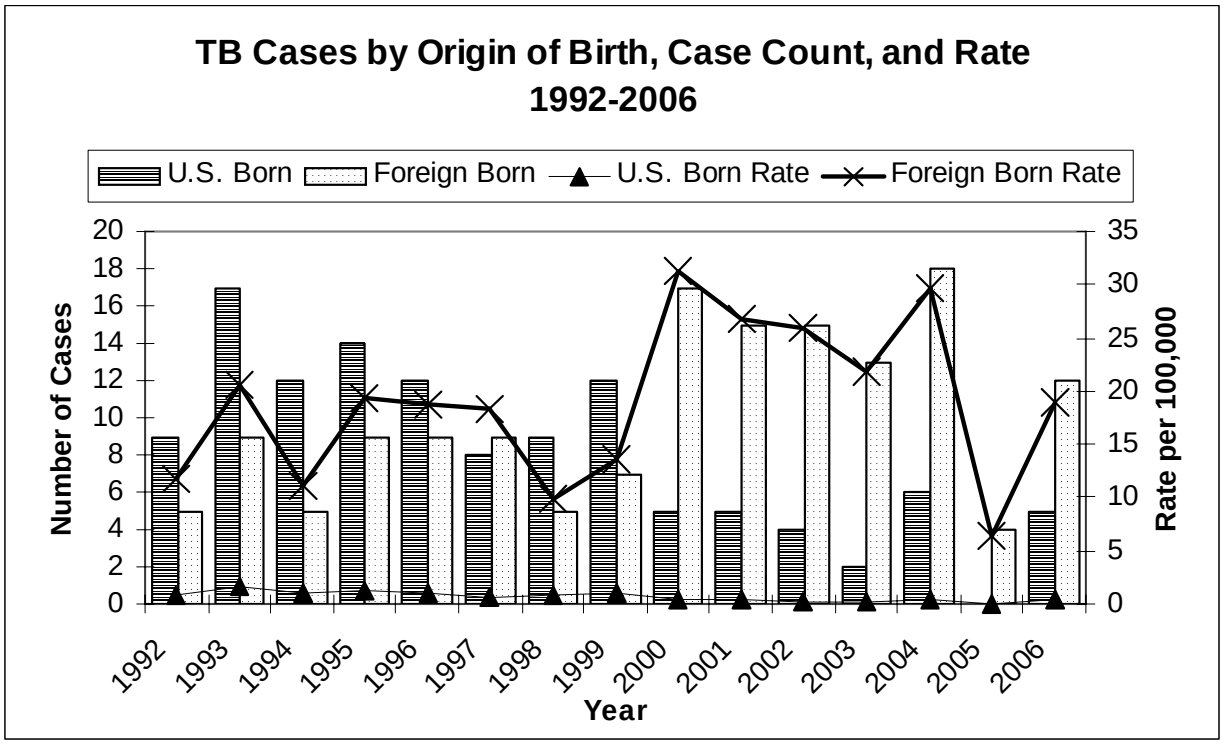


Figure 2. TB Case Count and Rate by Origin of Birth by Year for 1992-2006.



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The proportion of TB cases in foreign-born persons has been increasing since 1990. There was a shift that began in 2000 with 77% of active TB cases being foreign-born compared to 37% foreign-born between 1990-1999. This trend has continued through 2005 with 100% and 71% in 2006 being foreign-born *(see Figure 2)*. The highest numbers of foreign-born TB cases report countries of origin as India, Indonesia, Philippines, and Vietnam. Foreign-born cases are on average younger than U.S.-born cases. The average age of U.S.-born cases is 53 years and the average age of foreign-born cases is 38 years. Thirty-four percent of foreign-born cases had only been in the U.S. between one and four years prior to beginning treatment, 23% were in the U.S. less than one year, and 18% had been here 20 years or more prior to beginning treatment.

NH has held a strong performance record in meeting national TB objectives and patient outcomes as defined by the Centers for Disease Control and Prevention. The biggest challenge in a low-incidence state is to keep TB on the radar screen. Trends in recent years show progress toward elimination of TB in NH. These trends include a decreasing number of U.S.-born cases, the number of U.S.-born cases increasing with age (indicative of reactivation of latent infection) and the absence of any genotyping clusters. Program activities are prioritized toward prompt identification of cases and assurance of completion of treatment through the implementation of Directly Observed Therapy (DOT) as the standard of care for all cases. Public Health nurse case management for active cases includes: the implementation of isolation, treatment by DOT, patient education and monitoring for adherence and adverse reactions, arranging for HIV testing, and conducting contact investigations. Most active cases are managed in the home setting and hospitalization is rare.

The goal of eliminating TB in NH can be accomplished by identifying and treating cases, stopping transmission promptly and preventing future disease by identifying high-risk groups, testing, and treating those with latent TB infection (LTBI). Persons with risk factors for LTBI should be tested and considered for treatment of LTBI regardless of age. Risk factors include: close contacts to persons with infectious TB, persons who have immigrated from or lived in TB-endemic regions of the world, persons who are immunocompromised from a medical condition or medication and health-care personnel. Tuberculin skin testing is discouraged for those at low risk of developing TB disease.

TB is a reportable disease in NH. All suspect or confirmed cases of active or latent TB infection must be reported to the NH Department of Health and Human Services within 24 hours of identification.

New Hampshire Department of Health and Human Services
Communicable Disease Surveillance Section

REPORTABLE COMMUNICABLE DISEASES IN NEW HAMPSHIRE, 1997 - 2006

DISEASE / CONDITION	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Acquired Immune Deficiency Syndrome (AIDS)	55	42	46	31	34	63	39	38	19	34
Anthrax	0	0	0	0	0	0	0	0	0	0
Babesiosis	nr	nr	nr	nr	nr	nr	nr	nr	2	3
Botulism	0	0	1	0	0	0	1	1	1	0
Brucellosis	0	0	0	1	0	0	0	0	1	0
Campylobacteriosis	214	170	176	153	154	175	189	209	184	163
Chlamydial infection	815	962	981	1134	1396	1554	1611	1752	1831	2013
Cholera	0	0	0	0	1	0	0	0	0	0
Coccidioidomycosis	0	0	0	2	3	0	0	0	0	0
Creutzfeldt-Jakob Disease (CJD)	nr	nr	nr	nr	nr	nr	nr	nr	0	0
Cryptosporidiosis	7	17	20	25	17	31	26	30	40	47
Cyclospora infection	0	0	0	0	0	1	0	0	0	0
Diphtheria	0	0	0	0	0	0	0	0	0	0
Ehrlichiosis*	0	0	2	0	0	4	2	2	3	2
Encephalitis, arboviral Eastern Equine (EEE)	0	0	0	0	0	0	0	0	7	0
Encephalitis, arboviral West Nile Virus (WNV)	0	0	0	0	0	0	3	0	0	0
Escherichia coli infection, Shiga toxin-producing ¶	17	47	37	45	38	35	24	29	19	29
Giardiasis§	324	79	67	53	39	46	44	48	66	26
Gonorrhea	90	90	115	111	179	120	123	134	179	177
Haemophilus influenzae , invasive disease	14	9	20	13	8	13	19	22	9	17
Hantavirus Pulmonary Syndrome	0	0	0	0	0	0	0	0	0	0
Hemolytic Uremic Syndrome (HUS)	0	0	0	3	0	2	0	1	1	0
Hepatitis A	36	17	19	18	18	12	19	27	82	22
Hepatitis B	17	22	18	18	17	25	24	44	30	11
Human Immunodeficiency Virus (HIV)	27	29	26	26	22	25	33	39	24	32
Invasive Group A Streptococcus (GAS)	3	9	16	16	19	38	33	22	18	35
Invasive Group B Streptococcus (GBS)	0	7	17	8	12	20	13	17	32	36
Legionellosis	7	7	10	4	12	8	9	15	8	15
Leprosy, Hansen's disease	0	0	0	0	0	0	0	1	0	1
Listeriosis	4	3	5	4	4	4	4	4	9	7
Lyme disease	39	45	55	95	129	263	190	229	270	617
Malaria	11	5	2	1	2	8	7	5	6	10
Measles	3	0	1	3	0	0	1	0	1	1
Mumps	1	0	2	0	0	5	2	1	1	5
Neisseria meningitidis, invasive disease	17	13	13	12	15	14	12	7	12	4
Pertussis	135	148	137	131	31	80	120	134	186	227
Plague	0	0	0	0	0	0	0	0	0	0
Polio	0	0	0	0	0	0	0	0	0	0
Psittacosis	0	1	0	0	0	0	1	0	0	1
Rabies in Humans or Animals +	49	83	47	23	23	49	29	32	11	50
Rocky Mountain Spotted Fever	0	0	0	0	0	0	0	0	1	1
Rubella, including Congenital Rubella Syndrome	0	0	0	2	0	0	0	0	3	0
Salmonellosis	149	184	148	143	168	142	152	145	176	225
Shigellosis	55	17	20	6	7	15	10	10	19	11
Streptococcus pneumoniae, invasive disease	nr	nr	nr	nr	nr	nr	nr	nr	87	67
Syphilis ‡	23	15	12	17	17	26	34	26	33	35
Tetanus	0	0	0	0	0	0	0	0	0	0
Toxic-Shock Syndrome (TSS)	3	0	2	1	1	0	2	4	2	2
Trichinosis	0	0	0	0	0	0	1	0	0	0
Tuberculosis disease	17	14	19	22	20	19	15	24	5	17
Tularemia	nr	nr	nr	nr	nr	nr	nr	nr	0	0
Typhoid fever	0	1	0	0	2	0	4	0	0	0
Typhus	0	0	0	0	0	0	0	0	0	0
Vancomycin Resistant Enterococci (VRE)	60	35	37	56	66	92	105	147	182	178
Vancomycin Resistant *Staphylococcus aureus* (VRSA)	0	0	0	0	0	0	0	0	0	0
Varicella (Chickenpox)	nr	nr	nr	nr	nr	nr	nr	nr	337	419
Vibrio infection	nr	nr	nr	nr	nr	nr	nr	nr	2	1
Yersiniosis	9	3	6	6	5	4	2	2	3	4

* Includes human monocytic and human granulocytic ehrlichiosis

§ Since 8/97, only cases in persons 5 years of age and younger are reported

‡ Includes all stages of Syphilis infection

¶ Includes O157:H7

\+ The last human case of rabies was reported in 1996

nr= not reportable

Note: All the data in this report are based upon information provided to the New Hampshire Department of Health and Human Services under specific legislative authority. The numbers reported may represent an underestimate of the true absolute number and incidence rate of cases in the state. Any release of personal identifying information is conditioned upon such information remaining confidential. The unauthorized disclosure of any confidential medical or scientific data is a misdemeanor under New Hampshire law. The department is not responsible for any duplication or misrepresentation of surveillance data released in this report. Case counts by year are based on morbidity date, which is the date closest to onset of illness and may represent date of onset, date of diagnosis, or date of report, whichever is earliest. Case counts may not exactly match data published yearly by the Centers for Disease Control and Prevention. Data are complete as of June 1, 2007.

NEW HAMPSHIRE FIRST IN THE NATION TO OFFER HPV VACCINE

New Hampshire is the first state in the nation to provide human papillomavirus (HPV) vaccine, free of charge, to NH girls 11 through 18 years of age. The NH Immunization Program (NHIP) has funding currently to provide HPV vaccine to 25% of this population. Therefore, it will take approximately four years to provide vaccine for all girls in this age group. Women 19 through 26 years of age are not eligible for state-supplied vaccine. During the planning phase, the NH medical community was consulted for advice on how NHIP could best meet the needs of such a large, diverse group. With the cooperation and partnership of all NH health insurers, a substantial portion of the cost of HPV vaccine was secured, with the remaining vaccine costs covered by Vaccine For Children (VFC) funds provided by the Centers for Disease Control and Prevention (CDC), and the State of NH. Non-traditional VFC providers were offered information about the vaccine program and as a result, several OB/GYN providers, family planning clinics, and two colleges have enrolled in NHIP's children's vaccine distribution program. A fact sheet on HPV has been developed by NHIP. To receive a copy and get more information about HPV, contact NHIP at 271-4482 or by email at immunization@dhhs.state.nh.us.

UPDATED PANDEMIC INFLUENZA PLAN RELEASED

The NH DHHS Division of Public Health Services has released an update of its *Influenza Pandemic Public Health Preparedness and Response Plan*. Updates include further development of the following sections: Surveillance, Risk Communication, Functional Needs Populations, and Community-Based Containment Measures. Activities for local planners are emphasized throughout the plan. And, perhaps the most significant change, there is a major expansion of the Community-Based Containment Measures section, which details both pharmaceutical and non-pharmaceutical interventions. Implementation of these interventions is based on the Pandemic Severity Index, recently introduced by the CDC. There are also multiple sections and appendices that are new to the plan, such as the Infection Control Fact Sheet for Law Enforcement, Recommendations for Individuals in Quarantine, and the *New Hampshire Pandemic Influenza Antiviral Distribution Plan*.

The plan is posted on the NH DHHS website, on the "Pandemic Planning" page, which may be accessed using the following link: http://www.dhhs.nh.gov/DHHS/CDCS/LIBRARY/Policy-Guideline/dphs-influenza-plan.htm. Please direct questions about the plan to the Communicable Disease Control Section, (603) 271-4496.

LYME DISEASE UPDATE

Lyme disease was first discovered in the U.S. in the late 1970s and has been reportable to the NH Dept of Health and Human Services since 1990. Over the past several years, there has been an increase in the incidence of Lyme disease cases reported from New England states. During 2006, 617 cases, 47 cases per 100,000 persons, were reported in NH residents. This is an increase of 128% from 2005 during which 19.6 cases per 100,000 persons were reported. Most people are infected with Lyme disease between May and August, after being bitten by immature (nymph) deer ticks. Lyme disease can be prevented through the use of insect repellants, wearing protective clothing, and frequent tick checks and tick removal. For additional information, please visit our webpage at: http://www.dhhs.nh.gov.

COMMUNICABLE DISEASE BULLETIN

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LIST OF REPORTABLE DISEASES IN NEW HAMPSHIRE

** Diseases with an asterisk should be reported within 24 hours (all others within 72 hours)*

- Acquired Immune Deficiency Syndrome (AIDS)
- Anthrax [*Bacillus anthracis*]*
- Babesiosis [*Babesia microti*]*
- Botulism [*Clostridium botulinum*]*
- Brucellosis [*Brucella abortus*]*
- Campylobacteriosis [*Campylobacter species*]
- CD4+ lymphocyte counts
- Chlamydial infection [*Chlamydia trachomatis*]
- Cholera [*Vibrio cholerae*]*
- Coccidioidomycosis [*Coccidioides immitis*]
- Creutzfeldt-Jakob Disease*
- Cryptosporidiosis [*Cryptosporidium parvum*]
- Cyclospora infection [*Cyclospora cayetanensis*]
- Diphtheria [*Corynebacterium diphtheriae*]*
- Ehrlichiosis [*Ehrlichia species*]
- Encephalitis, arboviral only*
- *Escherichia coli* O157 infection and other shiga toxin producing *E.coli*
- Food poisoning*
- Giardiasis [*Giardia lamblia*]
- Gonorrhea [*Neisseria gonorrhoeae*]
- *Haemophilus influenzae*, invasive disease, sterile site*
- Hantavirus Pulmonary Syndrome [Hantavirus]*
- Hemolytic Uremic Syndrome (HUS)
- Hepatitis, viral: A*, B, E, G
- Hepatitis, viral: positive B surface antigen in a pregnant woman
- Human Immunodeficiency Virus (HIV)
- Legionellosis [*Legionella pneumophila*]
- Leprosy, Hansen's disease [*Mycobacterium leprae*]
- Listeriosis [*Listeria monocytogenes*]
- Lyme disease [*Borrelia burgdorferi*]
- Malaria [*Plasmodium species*]
- Measles [Rubeola]*
- Mumps*
- *Neisseria meningitidis*, invasive disease, sterile site*
- Pertussis [*Bordetella pertussis*]*
- Plague [*Yersinia pestis*]*
- Pneumococcal disease, invasive [*Streptococcus pneumoniae*]*
- Pneumocystis pneumonia [*Pneumocystis jiroveci* formerly *carinii*]
- Poliomyelitis [Polio]*
- Psittacosis [*Chlamydophila psittaci*]*
- Rabies in humans or animals*
- Rocky Mountain Spotted Fever [*Rickettsia rickettsii*]
- Rubella, including Congenital Rubella Syndrome*
- Salmonellosis [*Salmonella species*] (report *S.* Typhi* within 24 hours)
- Shigellosis [*Shigella species*]
- Streptococcus Group A/B, invasive disease [*Streptococcus pyogenes/agalactiae*], sterile site
- Syphilis, including Congenital Syphilis Syndrome [*Treponema pallidum*]
- Tetanus [*Clostridium tetani*]
- Toxic-Shock Syndrome (TSS) [streptococcal or staphylococcal]
- Trichinosis [*Trichinella spiralis*]
- Tuberculosis disease [*Mycobacterium tuberculosis*]*
- Tuberculosis infection, latent
- Tularemia [*Francisella tularensis*]*
- Typhoid fever [*Salmonella* Typhi]*
- Typhus [*Rickettsia prowazekii*]*
- Varicella*
- Vibrio infection [*V. cholerae, V. parahaemolyticus, V. vulnificus*]*
- Vancomycin Resistant Enterococci (VRE)
- Vancomycin Resistant *Staphylococcus aureus* (VRSA)*
- Yersiniosis [*Yersinia enterocolitica*]
- Any unusual occurrence or cluster of illness which may pose a threat to the public's health*